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- PN - JP2000063882 A 20000229
- TI - GRANULAR FAT AND OIL AND ITS PREPARATION
- AB - PROBLEM TO BE SOLVED: To obtain an oil-exudation-free rigid granular fat and oil by allowing starch particles to adsorb a fat and oil and granulating them.
- SOLUTION: Starch particles and 1-100 wt. % fat and oil are mixed with each other under agitation, whereupon the fat and oil is adsorbed by the particles to form a powder. This mixture is mixed with 20-50 wt. % water, optionally mixed with a binder such as an oxidized starch or dextrin dissolved by heating, and kneaded, and the mixture is granulated by means of an extruder granulator. The extrudate is dried and then cut into pieces having a necessary length. The granulation process adopted is exemplified by tumbling granulation, extruding granulation, spray drying granulation, fluidized bed granulation, compression granulation, or agitation granulation. The starch used is exemplified by a natural starch such as potato starch, cornstarch, sweet potato starch, tapioca starch, or sago starch or a modified starch thereof (e.g. acid-decomposed starch, oxidized starch, a starch derivative, or a wet-heat-treated starch). The fat and oil used is exemplified by a vegetable oil, an animal oil, a seasoning oil, or an oily organic substance.
- I - C11B15/00 ;A23D9/007
- PA - NIPPON STARCH CHEMICAL CO LTD
- IN - TANAKA NOBUMASA;FUKUDA HAJIME
- ABD - 20000914
- ABV - 200005
- AP - JP19980238379 19980825
- PD - 2000-02-29

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to granular fats and oils and its manufacture method. It can use for food, medicine, cosmetics, and agricultural chemicals.

[0002]

[Description of the Prior Art] Conventionally, there is the method of grinding and granulating fats and oils solid at a room temperature at low temperature as the manufacture method of granular fats and oils, or fusing, and spraying into a cool room. Moreover, the method of mixing and corning fats and oils, the base material for fats-and-oils inclusion, and a polyol is proposed. (Patent No. 2601300)

[0003]

[Problem(s) to be Solved by the Invention] The former is inapplicable only to fats and oils solid at a room temperature among the above-mentioned methods. Since the latter contains a polyol, the sweet taste of a polyol will mix and, in the case of food etc., it will spoil an original flavor.

[0004]

[Means for Solving the Problem] In order that this invention persons might solve this technical problem, wholeheartedly, as a result of research, by making fats and oils stick to the starch which corned, i.e., a starch granulation object, and corning this further, they discovered that the granular fats and oils which fats and oils ooze out and are not ** could be manufactured, and completed this invention. Moreover, if boiling water is covered over granular fats and oils by making starch into partial decomposition starch, what starch dissolves transparently will be made.

[0005]

[Embodiments of the Invention] The starch granulation object used for this invention corns starch by the granulation method usually performed, and a rolling granulation method, a piston granulation method, a spray-drying-granulation method, a fluid bed granulation method, a compression granulation method, and an agitation granulation method are mentioned as a granulation method. Among these, since a spray-drying-granulation method can manufacture a small globular form grain, it is especially desirable.

[0006] As starch which can be used, natural starch, such as potato starch, corn starch, sweet potato starch, a tapioca starch, a sago starch, rice starch, and Amaranthus starch, and those modified starches (starch derivatives, such as acidolysis starch, an oxidized starch, etherification, esterification, and bridge formation, moist-heat-treatment starch, etc.) are mentioned. In field of the inventions, such as food, when boiling water is covered and the granular fats and oils used as transparent liquid are required, partial decomposition starch like acidolysis starch or an oxidized starch is suitable.

[0007] What is necessary is to mix these starch and water, to make it 10 - 50% of slurry, and just to add and carry out spray drying of the oxidized starch which carried out the heating dissolution, and the binders, such as a dextrin, if required, in order to manufacture a starch granulation object using a spray-drying-granulation method.

[0008] As fats and oils used by this invention, vegetable oil, animal oil, seasoning oil, an oily organic substance, etc. are mentioned. If mixed churning of the fats and oils is carried out one to 50% of the weight preferably one to 100% of the weight, fats and oils will adsorb at a starch

granulation object, and it will become powder at a starch granulation object. As for fats and oils solid at a room temperature, it is desirable to make it liquefied and to mix at the temperature beyond the melting point.

[0009] If this mixture is corned by the further usual granulation method, the granular fats and oils of this invention will be obtained. In the case of a piston granulation method, binders which mixed water 20 to 50% of the weight into the above-mentioned mixture, and carried out the heating dissolution when required, such as an oxidized starch and a dextrin, are added and kneaded, and it corns in a pellet mill. It cuts to required length after dryness.

[0010] Hereafter, although an example explains this invention in more detail, this invention is not limited only to these examples.

[0011]

[Example 1] Mixed churning of the corn-starch 100 section, the water 150 section, and the zymolysis dextrin (reducing-sugar (hereafter referred to as DE) =14) 4 section was carried out, this slurry was dried with the rotating-disc formula parallel flow type spray drier by the conventional method, and the starch granulation object was obtained. The mean particle diameter of this starch granulation object was about 0.2mm. Mixed churning of the starch granulation object 100 above-mentioned section and the soybean-oil 50 section was carried out, and the oil was made to often stick to a starch granulation object. At this time, it changed into the state of the powder which became wet with the oil. It corned with the frontal-drive appearance type screw die pressing appearance granulating machine which carries out addition kneading of the zymolysis dextrin (DE=14) 10% solution 40 section, and has the die of 1.0mm of diameters in this. The air bus cut in length of about 2.0mm after dryness at 50 degrees C. These granular fats and oils were the very firm particle which fats and oils ooze, and there is no **, and cannot break easily. Moreover, when 5g was supplied to 100ml of water, it collapsed completely in several minutes and the oil floated in the water surface.

[0012]

[The example 1 of comparison] Although mixed churning of the corn-starch 100 section and the soybean-oil 50 section was carried out, starch could not adsorb an oil and it became the shape of a slurry which starch suspended to oil. Piston granulation was not able to be carried out although addition mixture of the zymolysis dextrin (DE=14) 10% solution 40 section was carried out at this.

[0013]

[Example 2] Granular fats and oils were manufactured by the same operation as an example 1 except having changed to corn starch and having used the oxidization tapioca starch (that whose viscosity (50 degrees C, BM type viscometer 30rpm) of 25% of concentration is 70cps). These granular fats and oils were the very firm particle which fats and oils ooze, and there is no **, and cannot break easily. Moreover, when 5g was supplied to 100ml of boiling water, it dissolved completely in several minutes, and became transparent liquid, and the oil floated in the water surface.

[0014]

[Example 3] Spraying the 20 sections of 10% solution of oxidization potato starch (that whose viscosity (50 degrees C, BM type viscometer 30rpm) of 25% of concentration is 90cps) on the corn-starch 100 section, it corned with the high-speed churning type granulating machine, the sieve (sieve-opening size of 0.35mm) of 42 meshes shook after dryness, and the starch granulation object was obtained. Mixed churning of the starch granulation object 100 above-mentioned section and the soybean-oil 30 section was carried out, and the oil was made to stick to a starch granulation object well. Spraying the 50 sections of 10% solution of oxidization potato starch (that whose viscosity (50 degrees C, BM type viscometer 30rpm) of 25% of concentration is 90cps) on this, it corned in the cone pan type pelletizer, and dried at 50 degrees C by air bus. The sieve of seven meshes and 14 meshes sorted out, and granular fats and oils were obtained. The mean particle diameter was about 2mm. These granular fats and oils were the very firm particle which fats and oils ooze, and there is no **, and cannot break easily. Moreover, when 5g was supplied to 100ml of water, it collapsed completely in several minutes and the oil floated in the water surface.

[0015]

[Effect of the Invention] As explained above, according to this invention, the firm granular fats and oils which an oil oozes out and are not ** are made. It is applicable to liquefied fats and oils at a room temperature. Moreover, in order not to use a polyol, the sweet taste of a polyol does not mix in

fats and oils. Moreover, since it is easy to collapse by water, separation of an oil starts promptly at the time of adding water. If the starch granulation object using partial decomposition starch is used, with boiling water, it will dissolve promptly and will become a transparent solution.

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CLAIMS

[Claim(s)]

[Claim 1] Granular fats and oils characterized by making fats and oils stick to a starch granulation object, and corning this further.

[Claim 2] The process of the granular fats and oils characterized by making fats and oils stick to a starch granulation object, and corning this further.

[Claim 3] Granular fats and oils according to claim 1 characterized by starch being partial decomposition starch.

[Claim 4] The process of the granular fats and oils according to claim 2 characterized by starch being partial decomposition starch.

[Translation done.]

JAPANESE

[JP,2000-063882,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF
THE INVENTION TECHNICAL PROBLEM MEANS

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